CLAIMS

What is claimed is:

1. A method for adjusting a timing of at least one first base station to maintain synchronization with a neighboring base station, comprising the steps of:

determining an estimation of a timing accuracy associated with each said at least one first base station with respect to said neighboring base station;

for each said first base station having its timing accuracy over a threshold:

receiving a first message at that first base station to transmit a communication burst;

receiving said communication burst at said neighboring base station;

measuring an estimated time difference between that first base station and said neighboring base station in response to a second message using said received communication burst; and

adjusting that first base station's timing in response to said measurement.

2. The method of claim 1 further comprising the steps of:

determining a base station having a time base more accurate than each said first base station, the more accurate base station making said measurement; and

updating each said first base station's estimated timing accuracy, wherein the updated timing accuracy estimation indicates a worse timing accuracy than said neighboring base station.

3. The method of claim 2 wherein said neighboring base station measures the time of arrival of said communication burst to determine said estimated time difference.

4. The method of claim 2 wherein a main base station is assigned a best timing accuracy and all other base stations within a group comprising each said first base station slave their timing to the main base station.

5. The method of claim 1 wherein said first and second messages are transmitted by a radio network controller (RNC).

6. The method of claim 5 wherein said adjustment is made in response to a third message from said RNC.

7. The method of claim 5 wherein said RNC stores and updates said determined estimation.

8. The method of claim 7 wherein said RNC combines any of said first, second or third messages with another of said messages.

9. A method for adjusting a timing of at least one first base station to maintain synchronization with a neighboring base station, comprising the steps of:

determining an estimation of a timing accuracy associated with each said at least one first base station with respect to said neighboring base station;

for each said first base station having its timing accuracy over a threshold:

receiving a first message at said neighboring base station to transmit a communication burst;

receiving at that first base station said communication burst;

measuring an estimated time difference between that first base station and said neighboring base stations in response to a second message using said received communication burst; and

adjusting that first base station's timing in response to said measurement.

10. The method of claim 9 wherein that first base station measures said time difference.

11. The method of claim 10 further comprising the steps of:

determining a base station having a time base more accurate than each said first base station; and

updating each said first base station's estimated timing accuracy, wherein the updated timing accuracy estimation indicates a worse timing accuracy than said neighboring base station.

12. The method of claim 11 wherein said first base station measures the time of arrival of said communication burst to determine said estimated time difference.

13. The method of claim 12 wherein a main base station is assigned a best timing accuracy and all other base stations within a group comprising each said first base station slave their timing to the main base station.

14. The method of claim 11 wherein said first and second messages are transmitted by a radio network controller (RNC).

15. The method of claim 14 wherein said adjustment is made in response to a third message from said RNC.

16. The method of claim 14 wherein said RNC stores and updates said determined estimation.

17. The method of claim 16 wherein said RNC combines any of said first, second or third messages with another of said messages.